

Globalization and Evolving Preferences Drive U.S. Food-Import Growth

Nora Brooks, Jean C. Buzby, and Anita Regmi

Using import data from the U.S. Census Bureau and import-refusal data from the U.S. Food and Drug Administration (FDA), this study examines patterns of U.S. imports together with products and countries that register recurring violations of FDA import regulations. Results indicate faster import-growth trends for consumer-ready foods. While most bulk-food commodities and perishable high-value products, such as fruit and vegetables, are sourced from neighboring countries in the Western Hemisphere, processed foods, many spices, and other tropical products are sourced globally with rising import shares for many countries in Asia. A correlation is also noted between rising imports and a higher number of refusals for products and countries registering fast import growth.

Globalization and evolving consumer demand have contributed to an increasing inflow of U.S. food imports, which have been particularly rapid for consumer-ready foods. Improved transportation and marketing logistics, together with the expansion of multinational food companies operating across many countries, have enabled grocery stores to offer a wide array of exotic and other foods for sale. U.S. consumer demand, together with this improved accessibility, has been a key factor in contributing to food-import growth. As Americans become better educated, wealthier, and more ethnically diverse, they are increasingly demanding more diverse, convenient, and healthful foods (Frazao, Meade, and Regmi 2008). For example, imports of many tropical products, spices, and different ethnic and gourmet products have grown in recent years.

While the global food industry offers U.S. consumers a more affordable array of diverse food products year-round, it also increases food-safety risks from cross-border contamination. In many cases, the United States imports food from countries whose less-developed food-safety standards, regulations, and enforcement are challenged to keep pace with increased exports. Therefore, rising U.S. food imports have been accompanied by an increase in the number of U.S. Food and Drug Administration (FDA) import refusals of food shipments from developing countries (Buzby, Unnevehr, and Roberts 2008; Regmi et al. 2008).

In light of these concerns, the Economic Research Service of the USDA analyzed U.S. food imports, with a particular focus on food products and exporting countries that have registered rapid

growth. This analysis also examined how the pattern of food imports may be affected by the proximity of the source country, free-trade agreements (FTAs), intra-industry trade, and changing consumer preferences. In addition, data on food shipments refused admission into U.S. commerce by the FDA are analyzed to identify products and countries with recurring refusal problems.

Data

Trade data from the Census Bureau of the U.S. Department of Commerce are available at the United States' Harmonized Tariff Schedule (HTS) of 10-digit codes. While this level of detail provides for a rigorous analysis, it is too detailed for the general analysis desired in this paper. Therefore, we use the HS-6 level recognized by the World Customs Organization (which governs international trade data reporting) to analyze trade patterns for 1998 through 2007.

The FDA import-refusal data used in this analysis covers the period 1998–2004. FDA import violations may concern adulterated products (e.g., contaminated with filth, pathogens, or unsafe pesticide residues) or misbranded products (e.g., labels not in English). While a study by Buzby, Unnevehr, and Roberts (2008) revealed recurring food-safety risks and other problems (e.g., inadequate labeling) in certain types of imported foods, these findings do not indicate the actual level or distribution of food-safety risk posed by imports to American consumers. Shipments selected for inspection or other administrative actions are not made at random. Instead, the FDA relies on risk-based criteria to guide its actions, including data

on products and manufacturers with a history of violating U.S. import regulations. In essence, import refusals highlight food-safety problems that appear to recur in trade and where the FDA has focused its import alerts and monitoring efforts.

Country groupings used in the analysis are based on the World Bank classification of countries as low income, lower-middle income, upper-middle income, and high income (The World Bank 2006). In this report, we consider high-income countries to represent developed countries and the other three groups to represent developing countries.

U.S. Food-Import Profile

U.S. food imports grew sluggishly during FY 1998–2001, from \$41 billion to \$45 billion, but registered double-digit annual growth rates in recent years, exceeding \$78 billion in 2007. Rapid growth in recent years was primarily driven by increased imports of consumer-ready food products, such as fresh fruit, vegetables, meats, seafood, and processed foods, whose combined import value rose from \$30 billion in 1998 to \$67 billion in 2007. Import growth was relatively stable for raw bulk-food commodities such as grains and oilseeds, which increased roughly 14 percent from \$6 billion in 1998 to about \$7 billion in 2007. Imports of semi-processed intermediate products, such as oils, sweeteners, and cocoa paste, registered bigger gains, doubling in value from slightly over \$5 billion in 1998 to almost \$11 billion in 2007.

To identify fast-growing food products, U.S. agricultural imports were examined at the HS-6 level. There were 760 U.S. HS-6 tariff lines that registered imports during 2002 and 2007. Of these 760 tariff lines, 321 grew at a rate slower than the mean growth rate of 11 percent, 113 tariff lines registered the mean growth rate, and 297 exceeded the mean growth rate by at least twice the standard deviation. Only three percent of the 297 tariff lines that experienced growth rates faster than twice the standard deviation are bulk grains (Table 1), which further highlights the fact that value-added products are driving the rapid growth in U.S. food imports. The fast-growing import groups with the largest share of the total number of tariff lines are fruits and nuts, seafood, vegetables, meat, and manufactured grain products.

As U.S. food imports rise, the number of import

refusals due to FDA violations also increased. Of the 70,366 total FDA violations noted for food products during 1998–2004, 65 percent were for adulteration, 33 percent were for misbranding, and two percent were for “other violations.” These “other” violations include violations that the FDA tags as importation restricted; forbidden or restricted in sale; unsanitary manufacturing, processing, or packaging; nonstandard; prohibition without permit; or unspecified. More details on import trends and FDA refusals by food product are provided in Regmi et al. (2008).

Evolving Demand Shapes U.S. Import Profile

Import growth for consumer-ready foods can be attributed to U.S. consumer-demand for greater diversity, convenience, and more healthful products. Across all commodities, imports of processed products registered faster growth than did their unprocessed forms (Figure 1). For example, growth in U.S. imports of processed sugar, cocoa, and grain products was higher than for raw and refined bulk sugar, cocoa beans, and bulk grains. Nevertheless, imports of bulk grains increased 73 percent during this period. This was driven by a rapid gain in imports of semi-processed grain products such as hulled grains, flour, meal, and groats, whose total import value grew from \$21 million in 1998 to \$143 million in 2007. Among high-value foods, which include vegetables, fruit, and fish/seafood, imports of both fresh and processed products grew rapidly during the past decade, partly in response to consumer demand for more healthful products.

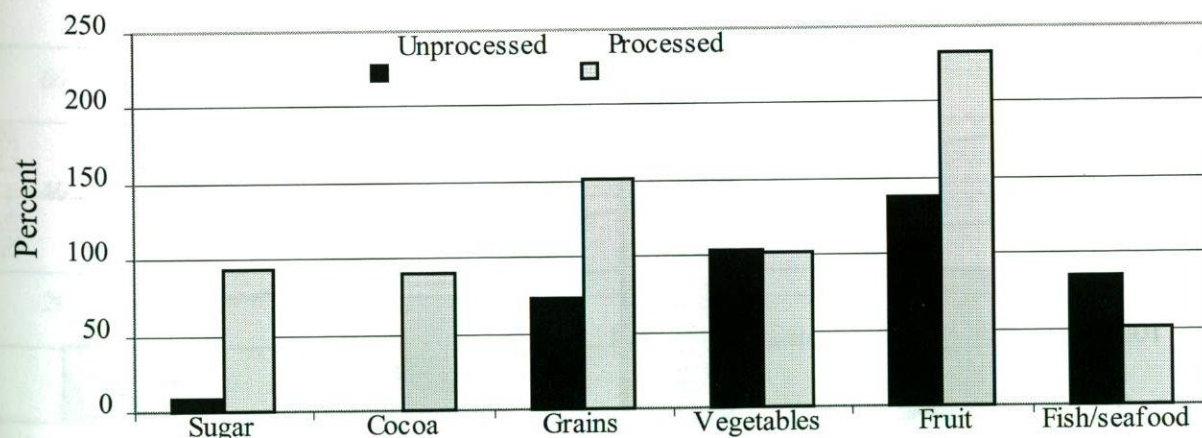
American consumers' taste for different ethnic flavors are driving greater imports of spices, whose total import value increased from \$426 million in 1998 to \$597 million in 2008. While imports of traditional spices, such as vanilla and cinnamon, remain relatively stable, imports of a range of peppers and other spices are rising. In 2007, over 60 percent of all spice imports were accounted for by a variety of black and chili peppers imported from several countries in Latin America and Asia. Total spice imports have also been boosted by growth in cumin, ginger, cardamom, cloves, and many different spice mixtures.

Additionally, American consumers' demand for more diverse, convenient, and healthful products is reflected by the growth in imports of unsaturated oils and green tea (Figure 2). During 1998–2007,

Table 1. Fast Import-Growth Products, 2002–2007 (297 HS-6 Lines).

Product	Number of HS-6 lines	STD from mean growth rate	Share of 297 HS-6 lines (%)	2007 trade share of 297 HS-6 lines (%)
Fruit/nuts	44	3.7	15	18
Seafood	33	3.8	11	2
Vegetables	32	3.4	11	5
Grain products	21	3.6	7	7
Meat	21	3.9	7	1
Fats/oils	16	3.8	5	1
Vegetable oils	15	4.0	5	8
Dairy	11	3.5	4	1
Bulk grains	10	3.7	3	4
Oilseeds	10	4.0	3	2
Sugar/sweeteners	9	3.3	3	1
Coffee/tea/cocoa	8	4.0	3	13
Essential oils	8	3.5	3	9
Beverages	7	3.4	2	16
Food preparations	7	3.3	2	6
Prepared meat	6	2.8	2	2
Spices	4	2.8	1	1
Eggs	2	4.0	1	0
Other	33	3.5	11	3

Source: Compiled by ERS using data from U.S. Department of Commerce, Census Bureau.

**Figure 1. U.S. Import Growth Greatest for Consumer-Ready Food, Percent (1998–2007).**

Note: Unprocessed denotes “fresh” for vegetables, fruit and fish/seafood; “raw” and “refined” for sugar; beans for cocoa; and bulkgrains, flour, groats, and meal for grains.

U.S. imports of olive and rapeseed oils grew by over 100 percent in value, while green tea imports grew by over 500 percent. During the same period, imports of black tea in large packages greater than three kilograms declined slightly, while black tea imports in more-convenient packages weighing less than three kilograms increased nearly 200 percent. This pattern of U.S. tea imports illustrates the trend toward the rising demand for more healthful green tea and the growing preference for more convenient products sold in smaller packages.

Proximity and Free-Trade Agreements Impact U.S. Trade Patterns

The proximity of a source country appears to play a key role in determining the profile of U.S. food imports. Neighboring countries dominate U.S. import market for bulk grains and for many perishable unprocessed products with shorter shelf lives, such as meats, fluid milk, and fresh fish. Imports of processed products (which are generally easier to transport) are affected both by a country's natural ability to produce the raw commodity and by its comparative advantage to manufacture or process food products (Regmi et al. 2005). The latter chang-

es as the investment climate and relative wage rates change across countries, making some countries more attractive for foreign direct investment by multinational food-manufacturing companies.

Canada and Mexico supply most of the U.S. imports of grains, meat, and fluid milk. Similarly, the United States sources most of its fresh vegetables and fruit from Canada, Mexico, and several countries in Central and South America. Meanwhile, products with greater shelf-life, such as dried, frozen, and processed fruit and vegetables, are increasingly imported from Asia, particularly from China, Thailand, India, and Vietnam.

In addition to geographic proximity, free-trade agreements with the United States may also affect U.S. food-import patterns. For example, aside from the advantages of geographic proximity, the North American Free Trade Agreement (NAFTA) may have enabled Canada and Mexico to seize the bulk of U.S. food-import market shares. Canada is the top source of U.S. bulk-food commodity imports in both volume and value, and Canada and Mexico are two of the United States' biggest suppliers of intermediate and consumer-ready food imports. The effect of FTAs is also evident in the rapid growth of food imports from Australia and Chile, countries which

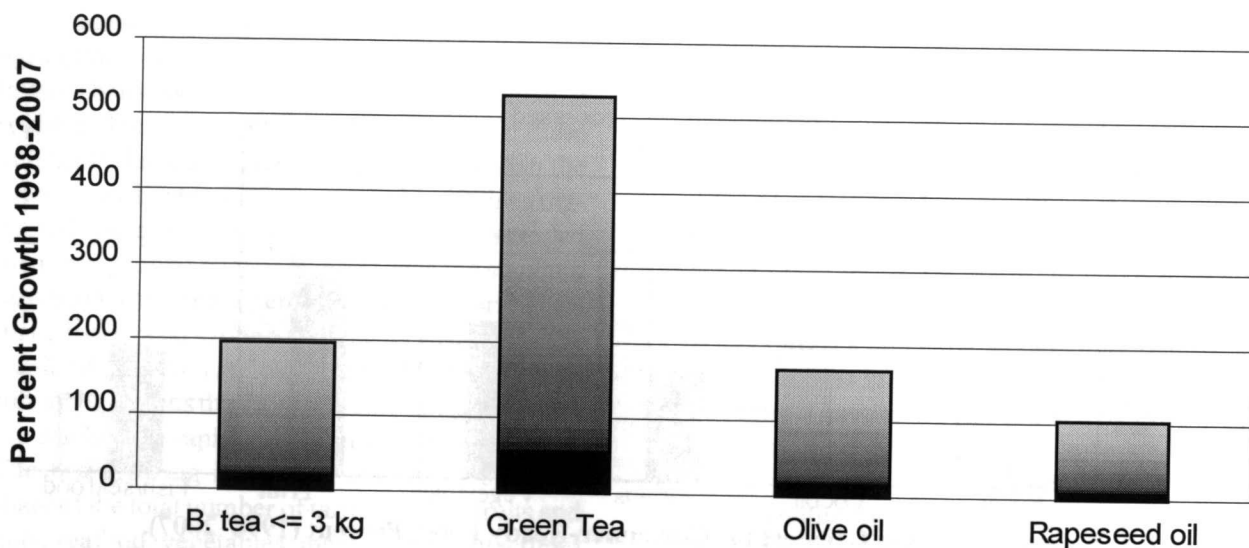


Figure 2. U.S. Imports of More Healthful and Convenient Products Rise Faster.

Source: U.S. Census.

have recently signed FTAs with the United States. Australia's share of U.S. milk-powder imports grew from 16 percent in 1998 (\$2 million) to 25 percent in 2007 (\$9 million). U.S. imports of fresh fruit and vegetables from Chile have grown from a 15 percent market share in 1998 (about \$800 million) to over a 19 percent market share in 2007 (\$2.5 billion). Additionally, imports of fruit, vegetables, and other horticultural imports from signatories of other FTAs in Central and South America have been growing in recent years.

Growing Diversity in Imports Shifts Supplier Country's Share of U.S. Imports

Driven by U.S. consumers' demand for diverse, convenient, and more healthful food products, U.S. food imports from developing countries gradually increased, especially during the last five years (Figure 3). The share of total U.S. food imports from high-income countries, primarily Canada and the European Union, declined slightly from 51 percent in 2002 to 47 percent in 2007. The loss of market share for these countries was accompanied by growth in market shares for developing countries, particularly middle-income countries such as

Mexico, Chile, and China. Under competition from China and Indonesia, Canada's 65-percent share of the U.S. smoked and dried fish import market in 1998 declined to 23 percent in 2007. Similarly, Canada's lead in the U.S. market shares for frozen fish, processed meats, and fluid and powdered milk eroded with market shares rising for China (fish, milk), Brazil (meat), and Mexico (milk).

While a large share of the import growth from developing countries can be attributed to seasonal produce shipments and imports of spices and other tropical products, a significant component of this trade is from processed foods. Processed-food import growth from developing countries was partly spurred by foreign direct investment as many multinational companies ventured overseas to take advantage of agricultural-production capability and lower production costs in these countries. For example, New Zealand's dairy cooperative Fonterra established alliances and manufacturing plants in China and several countries in Latin America (Blaney and Gehlhar 2005). This may account for the growth in U.S. milk imports from Brazil, which were negligible in 1998 but valued at \$5 million in 2007. Similarly, investments by companies such as Mars have enabled China to be an important player

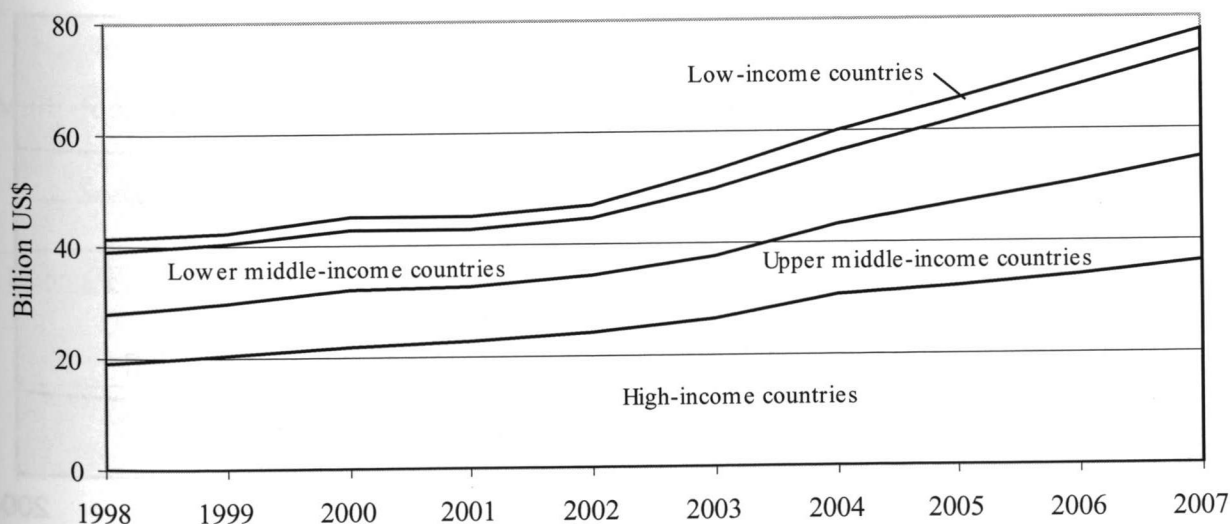


Figure 3. U.S. Food Imports from Developing Countries Grow Rapidly.

Source: U.S. Census. Country classification based on The World Bank (2006).

in the global candy market (Bernot 2005). U.S. candy imports from China grew almost ten-fold from less than \$12 million in 1998 to over \$116 million in 2008. Processed-food imports from developing countries are not limited to products which originate from commodities produced in those countries. For example, U.S.-produced peaches are exported in institutional-sized metal containers to Thailand, repackaged into plastic cups or jars, and then re-exported to the United States (USITC 2007).

The Pattern of Import Growth Is Reflected in Import Refusals

Since 2002, as U.S. imports from developing countries grew noticeably, so did their share of import refusals due to violations of FDA import regulations (Figure 4). The share of FDA violations from low-income countries in particular has grown consistently since 1998 and is the most evident for fish and seafood (from 17 percent in 1998 to 30 percent in 2004) and for fruit and fruit products (from six percent in 1998 to 14 percent in 2004).

The food groups with the most violations were the same groups which registered the fastest import growth rates. Examination of U.S. import data in-

dicated that fruit and nuts accounted for the largest share of growth among fast-growing tariff lines, followed by fish and seafood, vegetables, and processed grain products. FDA data analysis indicates the same four food groups accounted for the largest shares of total FDA import violations. Vegetables had the most FDA violations (almost 21 percent of total violations), followed by fishery/seafood (20 percent) and fruits (about 12 percent) (Figure 5). In the FDA refusal data, grain products were divided into several categories (e.g., bakery products, snack foods, macaroni and noodle products, whole grain products, and cereal and breakfast foods). Added together, the number of violations for grain-based foods placed total grain products in fourth place, consistent with its ranking based on import-value growth rate. Unfortunately a similar comparison is not possible for the meat category, since the inspection of most imported meat, poultry, and processed egg products falls under the jurisdiction of the USDA's Food Safety and Inspection Service.

Conclusion

Examination of U.S. food import data (1998–2007) indicates that across all food product categories,

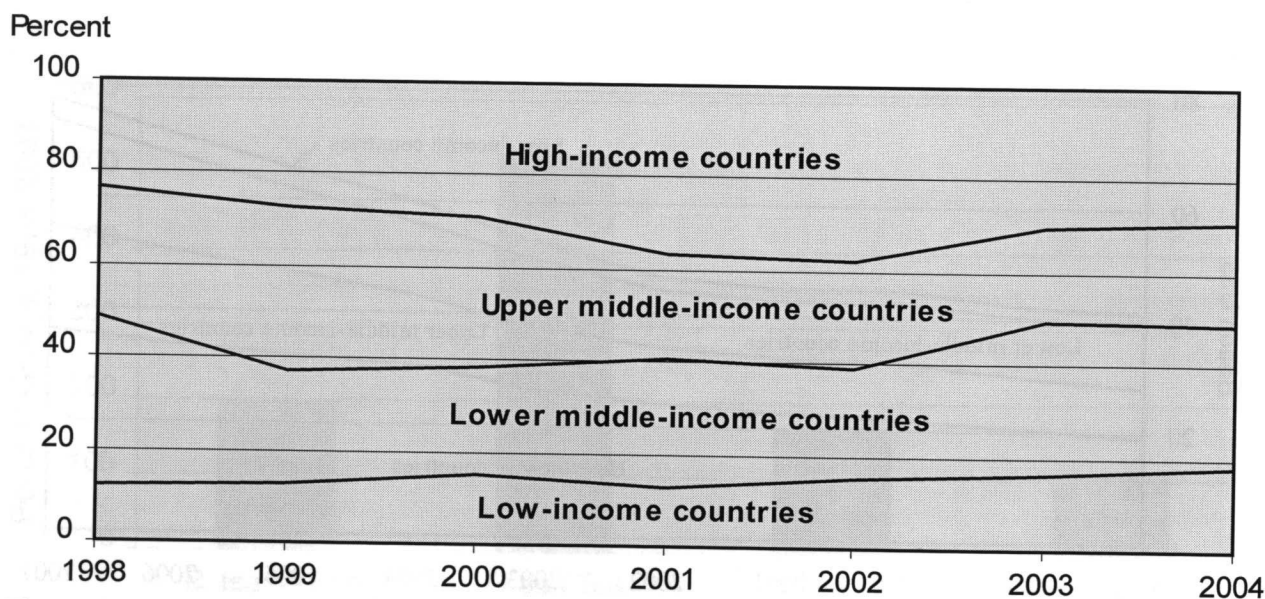


Figure 4. Developing Country Share of Import Refusals Rise.

Source: FDA Import-Refusal Reports 1998–04 and The World Bank country classification (2006).

import growth has been greater among consumer-ready foods such as fresh produce, meat, seafood, and processed foods. U.S. consumer demand for increased variety, convenience, and more healthful foods have contributed to this growth in imports. Evolving preferences and globalization of the food industry are shifting the pattern of U.S. food imports across a growing list of food suppliers, with increasing import shares noted for developing countries. As U.S. imports from lower-income countries with under-developed food safety standards, regulations, and enforcement have grown, their shares of FDA import violations have also increased. This is partly due to increased volume of imports, as well as to the fact that a large share of new imports is sourced from countries with less-developed safety standards and regulations. With expectations of continued

consumer demand for imported foods, U.S. food imports should continue this upward trend, particularly for many products from developing countries. Therefore, there is a need for harmonization of food standards and safety regulations. Also, cooperation and technical assistance could enhance the ability of developing countries to meet FDA regulations. Of the 70,366 FDA violations for food products during 1998–2004, 65 percent were for adulteration and 33 percent for misbranding. This indicates that food-standards cooperation and technical assistance would benefit both food safety and labeling objectives.

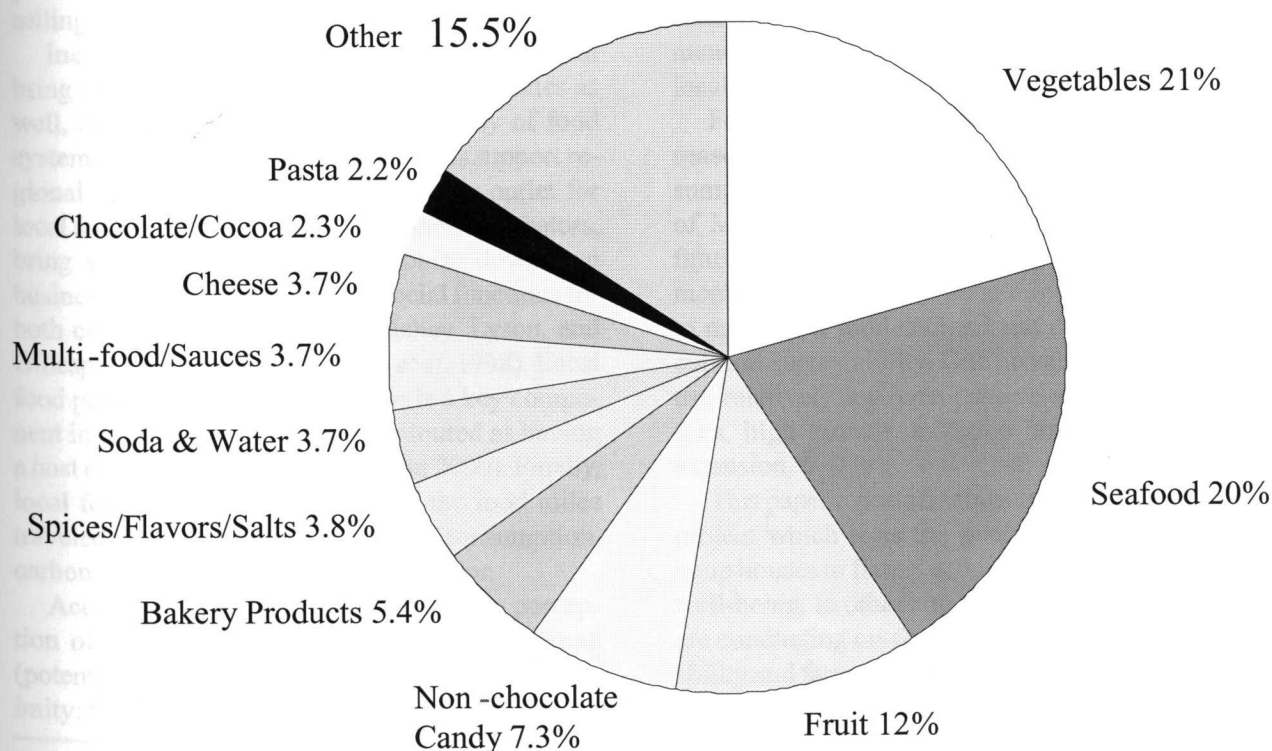


Figure 5. FDA Import Violations by Food Industry, 1998.

Source: ERS calculations using FDA Food-Related Import-Refusal Reports, 1998–2004.

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